ABSTRACT OF THE INVENTION

In a MPEG audio decoding process, an IDCT (Inverse Discrete Cosine Transform) process that generates time domain samples from frequency domain samples using a very limited number of prestored cosine coefficients is performed. Only the cosine coefficients that satisfy cos (π * (i/64)) where i = 0-32 are prestored. The cosine coefficients for i = 33-63 are calculated using the prestored coefficients by changing a sign of a corresponding symmetrical one of the stored coefficients, respectively. Then, sixty-four time domain samples (V_i) are generated from thirty-two frequency domain samples (S_k) according to the equation

$$V_i = \sum_{k=0}^{31} \cos\left((\pi/64)(i+16)(2k+1)\right) \times S_k$$

where i = 0 to 63, using only the prestored cosine coefficients and the calculated cosine coefficients.